ABSTRACT OF THE DISCLOSURE

The invention relates to systems and methods for assessing blood flow in single or multiple vessels and segments, for assessing vascular health, for conducting clinical trials, for screening therapeutic interventions for effect, for assessing risk factors, for evaluating intracranial pressure and for analyzing the results in a defined manner. The invention enables direct monitoring of therapies, substances and devices on blood vessels, especially those of the cerebral vasculature. Relevant blood flow parameters include mean flow velocity, systolic acceleration, and pulsatility index. Measurement and analysis of these parameters, and others, provides details regarding the vascular health of individual and multiple vessels and a global analysis of an individual's overall vascular health. The invention is applicable as both a system and method for monitoring and improving the design, performance, marketing and use of vascular stents. In particular, the invention enables DVA-assisted stenting procedures, including both pre-operative and post-operative management.